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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Myoung-Hoon Park

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DRINKER BIDDLE & REATH LLP
ATTN: PATENT DOCKET DEPT.
191 N. WACKER DRIVE, SUITE 3700
CHICAGO, IL 60606

EXAMINER

SELBY, GEVELL V

ART UNIT

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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/694,587	Applicant(s) PARK, MYOUNG-HOON	
	Examiner Gevell Selby	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-4, 6-9, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Dinev et al., US 6,788,338.**

In regard to claim 1, Dinev et al., US 6,788,338, discloses an image sensing unit for a digital camera comprising

(a) a light-receiving surface (see figure 1, elements 103 and 104); and

(b) a color filter mosaic (see column 4, lines 37-39),

wherein the light-receiving surface is divided into at least one chromatic sensing element (see figure 1, element 103 and column 4, lines 37-39) and at least one achromatic sensing element (see column 4, lines 46-49).

In regard to claim 2, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, wherein the light-receiving surface has a plurality of pixel sensors arranged regularly on a two-dimensional region (see column 4, lines 35-37).

In regard to claims 3 and 4, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, wherein the at least one achromatic and at least one chromatic sensing element contains pixel sensors (see column 4, lines 35-37).

In regard to claim 6, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, further comprising a scanning electronic circuit that outputs an electric image signal of incident light in contact with pixel sensors that has undergone photoelectric conversion (see column 4, lines 41-63).

In regard to claim 7, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, wherein it is inherent the color filter mosaic of the Dinev reference is separated at a predetermined distance from the light-receiving surface in the direction of the incident light, since the color attached to the sensor in a predetermined fixed position during the manufacture of the camera to accurately align the filter and sensor.

In regard to claim 8, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, wherein the chromatic sensing unit receives chromatic light entering through the color filter mosaic (see figure 1 and column 4, lines 37-39 and column 5, lines 11-21).

In regard to claim 9, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, wherein the achromatic sensing unit receives direct

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incident light that has not passed through the color filter mosaic (see figure 1 and column 5, lines 11-21).

In regard to claim 11, Dinev et al., US 6,788,338, discloses the image sensing unit for a digital camera of claim 1, further comprising a scanning electronic circuit that outputs incident light in contact with pixel sensors as an electric image signal that has undergone analog-to-digital conversion (see column 4, lines 41-63).

4. Claims 1, 3-5, 10, 12, 13, 15-22, 24, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Oda, US 7,154,547.

In regard to claim 1, Oda, US 7,154,547, discloses an image sensing unit for a digital camera comprising:

- (a) a light-receiving surface (see figure 1, elements 12); and
- (b) a color filter mosaic (see column 5, lines 54-64),

wherein the light-receiving surface is divided into at least one chromatic sensing element (see figure 13, elements R, G, and B) and at least one achromatic sensing element (see figure 13, elements CC and VCCD).

In regard to claims 3 and 4, Oda, US 7,154,547, discloses the image sensing unit for a digital camera of claim 1, wherein the at least one achromatic and at least one chromatic sensing element contains pixel sensors (see column 5, lines 40-60 and column 6, lines 37-39).

In regard to claim 5, Oda, US 7,154,547, discloses the image sensing unit for a digital camera of claim 3, wherein the at least one achromatic sensing element has pixel

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sensors that encompass an area larger than the area of pixel sensors in the at least one chromatic sensing element (see figure 13: each VCCD is larger than a RGB pixel).

In regard to claim 10, Oda, US 7,154,547, discloses the image sensing unit for a digital camera of claim 1, wherein the achromatic sensing unit receives direct incident light that has passed through the color filter mosaic (see column 6, lines 37-43 and figures 5-13).

In regard to claim 12, Oda, US 7,154,547, discloses a digital camera comprising:

- (a) an imaging photography unit (see figure 1, element 12);
- (b) a digital signal processor (see figure 1, element 20);
- (c) a data storage unit (see figure 1, elements 21 and 30);
- (d) an automatic focusing shutter (see column 4, lines 27-42: it is inherent the Oda reference comprises a shutter since it controls the shutter speed); and
- (e) an automatic focusing unit (see column 4, lines 42-47) wherein the imaging photography unit comprises a focusing lens (see figure 1, element 8), a focusing lens driving unit (see column 4, lines 42-47: it is inherent the Oda reference comprises a focusing lens driving unit in order to control the axial position of the lens), and an image sensing unit (see figure 13, element 1200) comprising a light-receiving surface that is divided into a chromatic sensing element (see figure 13, elements R, G, and B) and an achromatic sensing element (see figure 13, elements CC).

In regard to claim 13, Oda, US 7,154,547, discloses the digital camera of claim 12, further comprising a recording medium interface for inserting a recording medium (see figure 1, element 24 and column 4, lines 61-62).

In regard to claim 15, Oda, US 7,154,547, discloses the digital camera of claim 12, further comprising a display unit (see column 11, lines 59-63).

In regard to claim 16, Oda, US 7,154,547, discloses the digital camera of claim 15, wherein the display unit is a color LCD monitor (see column 11, lines 59-63).

In regard to claim 17, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the data storage unit comprises a temporary storage unit (see figure 1, element 21) and a non-volatile storage unit (see figure 1, element 30).

In regard to claim 18, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the image sensing unit comprises:

- (a) a light-receiving surface having a plurality of pixel sensors arranged regularly on a two-dimensional region of a predetermined size (see figure 13, element 1200);

- (b) a scanning electronic circuit that outputs an electric image signal of incident light contacting a plurality of pixel sensors that has undergone photoelectric conversion (see column 5, lines 30-39); and

- (c) a color filter mosaic separated at a predetermined distance from the light-receiving surface in the direction of the incident light (see column 5, lines 27-29).

In regard to claim 19, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the light-receiving surface comprises a chromatic sensing unit (see figure 2, element 204) for receiving chromatic light entering through the color filter mosaic (see column 5, lines 54-64) and an achromatic sensing unit for receiving direct incident achromatic light that has not passed through the color filter mosaic (see column 6, lines 37-43).

In regard to claim 20, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the automatic focusing unit receives a digital image signal from the image sensing means and performs automatic focusing in response to an automatic focusing indication signal (see column 4, lines 48-51).

In regard to claim 21, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the automatic focusing unit comprises:

- (a) a brightness comparator (see figure 1, element 22) that compares the digital image signal received from the image sensing means with a predetermined reference brightness signal and outputs a comparison result in response to the automatic focusing indication signal (see column 12, lines 38-48);

- (b) a region selector (see figure 1, element 20) that receives the digital image signal and outputs a chromatic digital image signal in response to the automatic focusing indication signal and selects either a chromatic or an achromatic image signal in response to the brightness comparison result (see column 12, lines 20-24 and 52-63); and

(c) a focus signal generator that analyzes the high frequency component of the digital image signal output from the region selector, calculates a focal value, and outputs a focus signal at the time the focal value is a maximum in response to the automatic focus indication signal (see column 17, lines 54-56).

In regard to claim 22, Oda, US 7,154,547, discloses the digital camera of claim 12 wherein the focusing lens driving unit moves a focusing lens within a predetermined range in response to an automatic focusing indication signal and fixes the location of the focusing lens in response to a focus signal (see column 4, lines 42-47).

In regard to claim 24, Oda, US 7,154,547, discloses the digital camera of claim 12, wherein the light-receiving surface may be realized by a metal oxide semiconductor image sensor or a charged coupled device (see column 4, lines 9-12 and column 5, lines 36-39).

In regard to claim 25, Oda, US 7,154,547, discloses a method for automatically focusing a digital camera, the method comprising the steps of:

(a) determining whether amount of light incident onto an image sensing unit is greater than a predetermined amount (see column 17, lines 13-24);

(b) if the amount of light incident onto the image sensing unit is greater than the predetermined amount, then performing automatic focusing using a signal from a chromatic sensing element (see column 17, lines 25-38); and

(c) if the amount of light incident onto the image sensing unit is less than the predetermined amount, then performing automatic focusing using a signal from an achromatic sensing element (see column 17, lines 51-56).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, US 7,154,547.**

In regard to claim 14, Oda, US 7,154,547, discloses the digital camera of claim 13. The Oda reference does not disclose wherein the recording medium comprises a portable compact flash card, smart media, and memory stick.

Official Notice is taken that it is well known to one of ordinary skill in the art that a recording medium comprises a portable compact flash card, smart media, and memory stick, in order to be compatible with multiple devices to transfer image data via the medium for further processing or viewing.

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Oda, US 7,154,547, wherein the recording medium comprises a portable compact flash card, smart media, and memory stick, in order to be compatible with multiple devices to transfer image data via the medium for further processing or viewing.

7. **Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, US 7,154,547, in view of Dinev et al., US 6,788,338.**

In regard to claim 23, Oda, US 7,154,547, discloses the digital camera of claim 12. The Oda reference does not disclose wherein the chromatic sensing element and achromatic sensing element are controlled by separate control signals and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively.

Dinev et al., US 6,788,338, discloses a digital camera wherein the chromatic sensing element (see figure 1, element 103) and achromatic sensing element (see figure 1, element 104) are controlled by separate control signals (see column 4, lines 42-45) and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively (see column 4, lines 46-63 and figure 1).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Oda, US 7,154,547, in view of Dinev et al., US 6,788,338, wherein the chromatic sensing element and achromatic sensing element are controlled by separate control signals and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively, in order to capture high resolution images at a high frame rate.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2003/0081265, discloses an image forming apparatus with a black and white and a color sensor.

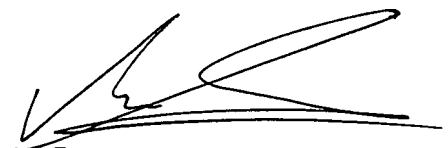
US 6,891,568, discloses a camera with a luminance sensor and a color sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs



VIVEK SRIVASTAVA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600